Ministry of Environment

SULPHUR DIOXIDE EMISSION INVENTORY OF BRITISH COLUMBIA FOR 1982

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by

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PREFACE

This report is a summary of sulphur dioxide emissions in the province of British Columbia in 1982. This inventory was requested as part of the Ministry's acid rain program.

The assistance and co-operation of staff from the Greater Vancouver Regional District and from the Ministry's regional operations division in submitting the data are acknowledged.

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1. INTRODUCTION

Sulphur dioxide is one of the major pollutants in British Columbia. Its effects on acid precipitation have been well documented.

The Ministry of Environment is currently enhancing its provincial acid precipitation monitoring program. To facilitate the siting of additional monitoring stations, an inventory of sulphur dioxide emission is necessary.

Two methods are used in this report to determine the amount of sulphur dioxide emissions.

The first method is based on values permitted under Waste Management Permits.

The second method is primarily based on results of emission tests. In the absence of emission tests, emission factors and material balances are used to estimate the amount of sulphur dioxide emitted.

2. SULPHUR DIOXIDE EMISSION INVENTORY OF BRITISH COLUMBIA ACCORDING TO INDUSTRY

Table 1 provides a provincial summary of sulphur dioxide emissions in 1982. The "Permitted" values are taken from Waste Management Permits. The "Estimated" values are based on actual emission tests or determined from emission factors and material balances.

The emissions are classified into three industry-groups, namely, Forest Products Industry, Oil and Gas Industry and Miscellaneous Industries which include Mining, Smelting and Transportation.

The "Permitted" total value of 310.7 tonnes per day of sulphur dioxide compared quite well with the "Estimated" value of 333.9 tonnes per day.

Nearly 40% of the total provincial emission is from the oil and gas industry.

TABLE 1

SULPHUR DIOXIDE EMISSION INVENTORY OF BRITISH COLUMBIA
ACCORDING TO INDUSTRY IN 1982
(Tonnes per day)

INDUSTRY	PERMITTED EMISSION	ESTIMATED EMISSION
Forest Products	75.6	79.4
Oil and Gas	135.0	142.7
Miscellaneous (Mining, Smelting and Transportation)	100.1	111.8
TOTAL	310.7	333.9

3. SULPHUR DIOXIDE EMISSION INVENTORY OF BRITISH COLUMBIA ACCORDING TO REGION IN 1982

The amount of sulphur dioxide emissions in the Greater Vancouver Regional District and the other regions of British Columbia are presented in Table 2. The regional boundaries are shown in Figure 1.

Emissions in each region are classified into the three industry-groups as discussed before. The "Permitted" and "Estimated" values are shown accordingly.

Approximately 70% of the total emission inventory is from the Kootenay and Peace Omineca regions. This is primarily due to emissions from the Cominco Smelter located in the Kootenay region and the oil and gas industries in the Omineca Peace region.

TABLE 2

SULPHUR DIOXIDE EMISSION INVENTORY OF BRITISH COLUMBIA ACCORDING TO REGION IN 1982

(Tonnes/Day)

REGION	FORESTRY		OIL & GAS PRODUCTION		MISCELLANEOUS		TOTAL	
	Permitted	Estimated	Permitted	Estimated	Permitted	Estimated	Permitted	Estimated
Vancouver Island	32	16.9	-	-	-	-	32	16.9
Lower Mainland	43.6	45.6	-	-	-	-	43.6	45.6
Okanagan	-	-	-	-	2.4	0.2	2.4	0.2
Thompson Nicola	-	1.5	10	2.4	-	-	10	3.9
Cariboo	-	1.2	-	-	-	-	-	1.2
Skeena	-	-	-	-	5.8	13.1	5.8	13.1
Omineca Peace	-	14.2	125	127	-	1.5	125	142.7
Kootenay	-	-	-	-	91.9	89.5	91.9	89.5
GVRD	-	-	-	13.3	-	7.5	-	20.8
TOTAL	75.6	79.4	135	142.7	100.1	111.8	310.7	333.9

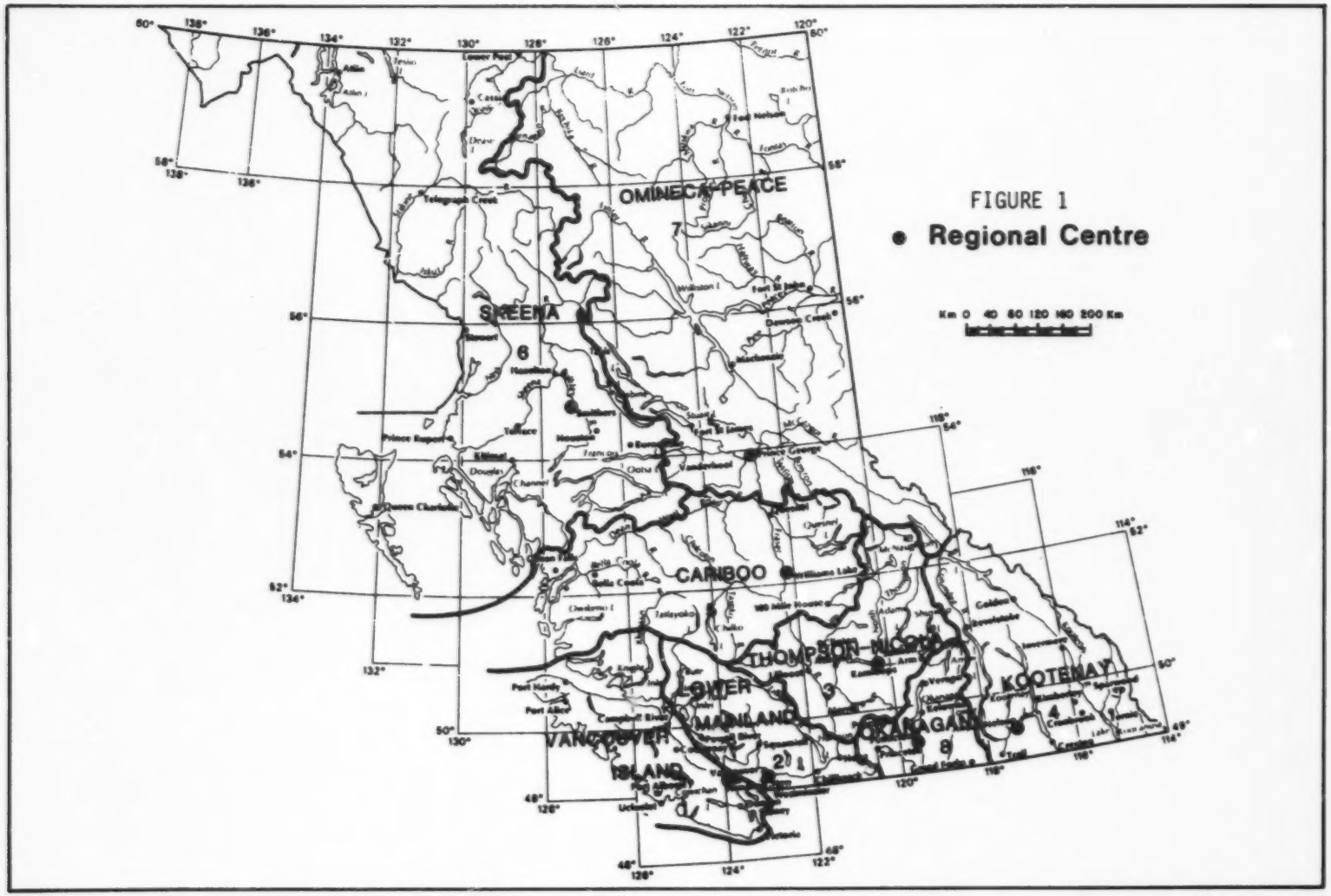

FIGURE 1

● **Regional Centre**